

EXHIBIT 13

DECLARATION OF DAVID A. TIRRELL

I, David A. Tirrell, declare as follows:

1. I am the provost at California Institute of Technology (Caltech) in Pasadena, CA. I have held that position since October 1, 2017. I have held an appointment as Professor of Chemistry and Chemical Engineering at Caltech since July 1, 1998. I previously held professorial appointments at Carnegie Mellon University and at the University of Massachusetts at Amherst.

2. As provost, I have personal knowledge of the contents of this declaration, or have knowledge of the matters based on my review of information and records gathered by Caltech personnel, and could testify thereto.

3. Caltech receives substantial annual funding from the Department of Energy (“DOE”). In fiscal year 2024, we expended \$25,846,148 in conducting research supported by DOE. Of this total, \$17,936,394 were expended as direct costs, \$7,909,754 as indirect costs. We have 83 active DOE awards and subawards.

4. The funding Caltech receives from DOE supports critical and cutting-edge research, which millions of Americans benefit from and depend on. For example:

- a. Caltech research in photo- and electrocatalysis is developing new routes to liquid hydrocarbon fuels via reduction of carbon dioxide. This research is directed toward increasing U.S. energy independence and reducing our reliance on imported fossil fuels.
- b. Caltech research in high-energy physics is developing new understanding of neutrinos through the Deep Underground Neutrino Experiment, conducted in collaboration with the Fermi National Accelerator Laboratory. While neutrinos are far from fully understood, there is good reason to believe that they may

provide us with new ways to monitor nuclear proliferation (for national security) and to explore the earth's crust for minerals of critical technological importance.

- c. Caltech research in quantum science and technology is developing new materials for quantum devices, new algorithms for quantum computing, and new strategies for quantum error correction – the central challenge in engineering a practical quantum computer.

5. Indirect costs are essential for supporting this research. The DOE's proposal to cut indirect cost rates to 15% would end or seriously jeopardize all of the research projects described in paragraph 4.

6. Indirect costs include those incurred in the construction and maintenance of state-of-the-art facilities for advanced research, as well as the procurement and maintenance of the equipment necessary to conduct such research. Without this equipment, we cannot conduct the research.

7. For example, with respect to the areas of research described in Paragraph 4:

- a. Caltech research in photo- and electrocatalysis is performed in the Jorgensen Laboratory, which was renovated with DOE support and is entirely devoted to research on liquid hydrocarbon fuels. Indirect cost recovery is essential to the operation and maintenance of the Jorgensen Laboratory.
- b. Caltech research in high-energy physics is performed in the Downs-Lauritsen Laboratory complex. Lauritsen was constructed with substantial DOE support, and its continued operation and maintenance are critically dependent on indirect cost recovery.

- c. Caltech research in quantum science and technology is to be conducted in the 70,000 square-foot Ginsburg Center for Quantum Precision Measurement, currently under construction and scheduled to open in 2026. Indirect cost recovery will be essential to the maintenance and operation of the Ginsburg Center.

8. Physical space costs are one of the largest components of indirect costs, and the amount of space available to researchers has a direct and obvious impact on the amount of research that can be done at Caltech. While construction of the Ginsburg Center is funded through private philanthropy, outfitting the new building with state-of-the-art instrumentation, and full occupancy and operation of the Center, would be put at grave risk by reduction in DOE funding for Caltech research.

9. In addition, indirect costs fund the administration of awards, including staff who ensure compliance with a vast number of regulatory mandates from agencies such as DOE. These mandates serve many important functions, including ensuring research integrity; properly managing and disposing of chemical and biological agents used in research; preventing financial conflicts of interest; managing funds; preventing intellectual property, technologies, or national security expertise from being inappropriately accessed by foreign adversaries; and providing the high level of cybersecurity, data storage, and computing environments mandated for regulated data.

10. Recovery of Caltech's indirect costs is based on predetermined rates that have been contractually negotiated with the federal government.

11. In fiscal year 2024, the predetermined indirect cost rate corresponded to approximately 30% of total costs. The amount of indirect cost recovered during the year reflects rates negotiated over several years, owing to the multi-year character of federal awards.

12. The impact of a reduction in the indirect cost rate would cause substantial harm to the Caltech research enterprise. As noted in Paragraph 3, of the \$25,846,148 in DOE funds expended in fiscal year 2024, \$17,936,394 were expended as direct costs, \$7,909,754 as indirect costs. We expect our expenditures in fiscal year 2025 to be similar.

13. If—contrary to what Caltech has negotiated with the federal government—the indirect cost rate is reduced to 15% of modified total direct costs, that would reduce the University’s anticipated annual indirect cost recovery by nearly 6,000,000, to approximately \$2,000,000.

14. This reduction will have deeply damaging effects on Caltech’s ability to conduct research from day one. For example:

- a. DOE-funded research on photo- and electrocatalysis currently supports approximately 60 graduate students, postdoctoral scholars and professional staff members. Continued support of this cohort of talented researchers would become untenable. Fewer graduate students would be admitted to Caltech, fewer postdoctoral scholars would be hired, and professional staff members would have appointments terminated before they could complete their research. Training of early-career investigators would be irreparably damaged and research results critical to America’s energy future would be lost.
- b. Hiring of new faculty members would be curtailed, slowing the development of the workforce that will be essential if we are going to meet the growing energy

needs of the nation, including those created by the growth of artificial intelligence.

- c. Loss of funding would also likely mean a reduction in preventive building maintenance. This would lead to failure of electrical, air-handling and plumbing systems in Caltech's research laboratories, with increased disruption of research activities to accommodate emergency repairs.

15. Caltech is in the process of preparing many applications for DOE research support. The uncertainty regarding DOE overhead policy makes it impossible to complete submission of these applications, which are intended to support research in fuel technologies, quantum science and technology, and high-energy physics.

16. Caltech has for decades relied on the payment of indirect costs. Until recently, we have been able to rely on the well-established process for negotiating indirect cost rates with the government to inform our budgeting and planning. Operating budgets rely on estimates of both direct and indirect sponsored funding to plan for annual staffing needs (*e.g.*, post-docs, Ph.D. students, and other research staff), infrastructure support (*e.g.*, IT networks, regulatory compliance, and grant management support), facility maintenance and equipment purchases. Furthermore, Caltech has long-term obligations—for example, to graduate students who rely on five-year commitments of support to complete their Ph.D. studies—and it relies on budgeted grant funding, including associated indirect cost recovery, to fulfill these commitments.

17. In addition to the immediate impacts and reliance interests described above, there are longer-term impacts that are both cumulative and cascading. Perhaps most harmful is the contraction in Caltech's ability to train the energy researchers of the future, which will compound from year to year if the proposed reduction in indirect cost recovery is implemented.

18. Disruptions to Caltech's energy research will also have negative effects in the Pasadena area and the broader region. For example, Caltech research in quantum science and technology has seeded a major collaboration with Amazon Web Services that employs more than 100 scientists and engineers in a new building constructed by AWS on the Caltech campus to house an ambitious Center for Quantum Computing. In collaboration with a major real estate development firm, Caltech is planning a 120,000 square foot innovation center to be constructed two blocks north of campus. Prospective tenants include Caltech partners in energy research and quantum science and technology. Development of the innovation center faces profound risk if DOE research support at Caltech is reduced.

19. Finally, slowdowns or halts in research by Caltech and other American universities will allow competitor nations that are maintaining their investments in research to surpass the United States in energy technologies, quantum computing and artificial intelligence, threatening both our Nation's national security and its economic dominance.

20. Nor can Caltech cover the funding gap itself. While Caltech maintains an endowment, it is neither feasible nor sustainable for Caltech to use endowment funds or other revenue sources to offset shortfalls in indirect cost recovery, for several reasons:

- a. The majority of Caltech's endowment is restricted to specific donor-designated purposes, such as scholarships, faculty chairs, and academic programs. Caltech is not legally permitted to use those funds to cover research infrastructure costs.
- b. Even the portion of the endowment that is unrestricted is subject to a carefully managed annual payout, typically around 5%, to ensure long-term financial stability for the institution.

- c. As a non-profit institution, Caltech applies all of its revenue to mission-critical activities, leaving little margin to absorb unexpected funding gaps. Unlike for-profit organizations, Caltech does not generate significant surpluses that could be redirected without impacting core academic priorities such as educational programs and financial aid support for students.

19. Moreover, absorbing the cost of a lower indirect cost rate, even if it were possible, would create long-term budget pressures on Caltech—which would in turn force reductions in key investments supporting Caltech’s faculty, students, staff, research, and teaching infrastructure, as well as other critical activities needed to maintain Caltech’s academic excellence and its ability to perform research in the national interest.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 13, 2025, at Pasadena, CA.



David A. Tirrell